San Rafael Valley Groundwater Basin

- Groundwater Basin Number: 2-29
- County: Marin
- Surface Area: 896 acres (1.4 square miles)

Basin Boundaries and Hydrology

The San Rafael Valley groundwater basin is a small, coastal basin located 12 miles north of San Francisco, and includes the City of San Rafael. It is bounded to the east by San Rafael Bay, which lies between San Pablo Bay to the north and San Francisco Bay to the south. The basin extends from its southernmost boundary near San Quentin, about 1.5 miles to its northern boundary of Rafael Creek. The basin extends inland (west) a distance that varies from about 1/2 mile in the south to just under 2 miles in the north. The basin boundaries approximate the contact between the artificial fill (predominantly) and alluvium (minor) in the basin and the surrounding bedrock. The artificial fill is characterized as fill overlying San Francisco Bay Mud; and the alluvium as Holocene, undifferentiated deposits (Knudsen, 2000). The annual precipitation in the basin averages 33 inches in the (USDA, 1999).

Hydrogeologic Information

Water Bearing Formations

Unconsolidated Quaternary alluvium comprises the water-bearing sediments in the basin (DWR, 1975). Published information describing the physical characteristics and thickness of these sediments were not found.

Restrictive Structures (optional)

None known (DWR, 1975).

Groundwater Level Trends

No published information was found that would indicate groundwater level trends for the San Rafael Valley groundwater basin.

Groundwater Storage

Groundwater Storage Capacity

No published information was found addressing the groundwater storage capacity of the San Rafael Valley groundwater basin.

Groundwater in Storage

No published report was found addressing the quantity of groundwater in storage.

Groundwater Budget (Type)

Not enough data exists presently to provide either an estimate of the San Rafael Valley basin's groundwater budget or the groundwater extraction from the basin

Groundwater Quality

Characterization No published information was found characterizing the groundwater in the San Rafael Valley groundwater basin.

Impairments Limited published information suggests that sea-water intrusion may be a problem within the basin. Data collected in 1954 indicated chloride concentrations exceeding 100 parts per million in a well (1N/6W-4F1) located east of the basin. As reported, the elevated concentration could be normal for the area, and did not necessarily indicate sea-water intrusion at that time. However, it was further reported that, in 1972, data suggested possible sea-water intrusion near San Francisco Bay (DWR, 1975).

Well Production Characteristics

No published information was found that would indicate well production characteristics in the San Rafael Valley groundwater basin.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	No data	
	Total depths (ft)	
Domestic	Range: 159	Average: 159 (Based on information from (1) drillers log submitted to DWR).
Municipal/Irrigation	Range: No data	Average: No data

Active Monitoring Data

No information was found that would indicate active monitoring is being conducted within the basin.

Agency	Parameter	Number of wells /measurement frequency
Department of Health Services and cooperators	Groundwater levels Miscellaneous water quality Title 22 water quality	

Basin Management

Groundwater management:	Unknown
Water agencies	
Public	Marin Municipal Water District
Private	

References Cited

USDA. United States Average Annual Precipitation, 1961-1990: Map Layer, 1999.

USGS, Open-File Report 00-444, Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County, San Francisco Bay Region, California: A Digital Database, 2000, Knudsen, etal.

California Department of Water Resources, Sea-Water Intrusion in California, Inventory of Coastal Ground Water Basins. Bulletin 63-5 October 1975.

Errata

Changes made to the basin description will be noted here.